

**REMARKS**

The Office Action of November 29, 2006, has been received and reviewed.

Claims 1-65 are currently pending in the above-referenced application. Of these, claims 1-22 have been considered and stand rejected. Claims 23-65 have been withdrawn from consideration for being drawn to a non-elected invention.

Reconsideration of the above-referenced application is respectfully requested.

**Substitute Declaration**

A substitute declaration is being submitted with this Amendment. The substitute declaration corrects a typographical error in the title, as well as an inventor's address.

**Rejections under 35 U.S.C. § 112, First Paragraph**

Claims 1-22 have been rejected under 35 U.S.C. § 112, first paragraph.

It has been asserted that each of claims 1-22 fails to comply with the written description requirement of the first paragraph of 35 U.S.C. § 112. Specifically, it has been asserted that, based on the disclosure of the above-referenced application, one of ordinary skill in the art would not have been motivated to use the claimed method to remove unconsolidated material from any structures other than those that have been fabricated upon semiconductor substrates. Office Action, page 2.

It should be noted that the art to which the claims of the above-referenced application pertain includes the field of programmed material consolidation methods – a field that is not at all limited to the fabrication of features on semiconductor substrate, but that also includes the fabrication of free-standing objects, as well as the fabrication of features on a wide variety of structures, or substrates. *See, e.g.*, paragraph [0011] of the as-filed specification. In fact, the as-filed specification of the above-referenced application notes that the disclosure applies to a wide variety of programmed material consolidation methods (paragraph [0014]), that such programmed material consolidation methods may apply to structures or features that have been fabricated on “fabrication substrates” (paragraph [0015]), that “semiconductor devices” are merely a non-limiting example of “fabrication substrates” to which the disclosed methods apply

(paragraph [0015]), and that the disclosed programmed material consolidation methods may also apply to “freestanding structures” (paragraph [0015]).

In view of the foregoing, it is respectfully submitted that the as-filed specification of the above-referenced application clearly provides one of ordinary skill in the art with an understanding of the broad applicability of the subject matter that has been disclosed in the above-referenced application and that is recited in claims 1-22.

Claims 1-22 have also been rejected under the first paragraph of 35 U.S.C. § 112 for allegedly failing to comply with the enablement requirement of that paragraph. In particular, it has been asserted that the specification of the above-referenced application does not provide one of ordinary skill in the art with a clear understanding of the meaning of a “programmable material consolidation-fabricated feature.” Office Action, page 3.

It is respectfully submitted that, at the very least, paragraphs [0014] and [0015] provide one of ordinary skill in the art with an understanding of what is meant by features that are fabricated by programmed material consolidation processes, or “programmable material consolidation-fabricated features,” and, thus, enable these features. Further enabling background information is provided in paragraphs [0003] through [0011] of the as-filed specification, while paragraphs [0097] through [00105] of the as-filed specification are further enabling.

With respect to the subject matter that is actually recited in claims 1-22, paragraphs [00118] through [00140] of the as-filed specification provide an enabling description of methods for removing unconsolidated material from programmable material consolidation-fabricated features.

In view of the abundance of enabling disclosure provided by the as-filed specification of the above-referenced application, it is respectfully submitted that claims 1-22 do, in fact, comply with the enablement requirement of the first paragraph of 35 U.S.C. § 112.

Withdrawal of the 35 U.S.C. § 112, first paragraph, rejections of claims 1-22 is respectfully requested, as is the allowance of each of these claims.

**Rejections under 35 U.S.C. § 112, Second Paragraph**

Claims 1-22 also stand rejected under 35 U.S.C. § 112, second paragraph, for being drawn to subject matter that is purportedly indefinite.

With respect to claim 1, it has been asserted that the term “unconsolidated material” would not be definite to one of ordinary skill in the art would. It is respectfully submitted that the as-filed specification provides a number of non-limiting examples of unconsolidated material. *See, e.g.*, paragraphs [0014], [0054], and [0055]. When considered in conjunction with the scope of the disclosure (*e.g.*, with respect to programmed material consolidation apparatus and methods; *see, e.g.*, paragraph [0014]), and the indication in independent claim 1 that the recited methods are for use in removing material from programmable material consolidation-fabricated features, it is respectfully submitted that one of ordinary skill in the art would readily understand the scope and meaning of “unconsolidated material” and its equivalent term “unconsolidated consolidatable material,” as used in independent claim 1 and several of its dependent claims.

Independent claim 1 has also been rejected under 35 U.S.C. § 112, second paragraph, because one of ordinary skill in the art purportedly would not understand what is meant by a “programmable material consolidation-fabrication feature.” Office Action, page 3. It is again submitted that, as the pertinent art is the field of programmed material consolidation apparatus and methods, one of ordinary skill in the art would readily understand the features or structures that may be fabricated with such apparatus or by such methods. Even without such an understanding, the as-filed specification of the above-referenced application (*see e.g.*, paragraphs [0014] and [0015]) provides one of ordinary skill in the pertinent art with an understanding of the scope and meaning of “programmable material consolidation-fabricated features.”

In addition, independent claim 1 has been rejected under the second paragraph of 35 U.S.C. § 112 “because there is no positive step of removing unconsolidated material from the substrate.” Office Action, page 3. Independent claim 1 has been amended to recite that “directing” removes unconsolidated consolidatable material from a substrate, a feature on the substrate, or from both the substrate and a feature thereon. Thus, amended independent claim 1 positively recites the removal of unconsolidated consolidatable material.

Claims 2, 3, 6, and 7 have been rejected under 35 U.S.C. § 112, second paragraph, because the phrase “sufficient pressure” in these claims is assertedly indefinite. The phrase “sufficient pressure” does not appear in claim 2. Claims 3, 6, and 7 have been amended to remove the phrase and any indefiniteness created thereby. The scope of each of claims 3, 6, and 7, however, remains unchanged.

Claims 4, 5, and 8-22 were apparently rejected merely for depending from independent claim 1. As independent claim 1 complies with the definiteness requirement of 35 U.S.C. § 112, second paragraph, it is respectfully submitted that each of its dependent claims 2-22 also recites subject matter with scope and meaning that would be readily understood by one of ordinary skill in the art.

It is respectfully requested that the 35 U.S.C. § 112, second paragraph, rejections of claims 1-22 be withdrawn, and that each of these claims be allowed.

#### **Rejections under 35 U.S.C. § 102(e)**

Claims 1-22 stand rejected under 35 U.S.C. § 102.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

#### Madsen

Claims 1-8 and 11-21 have been rejected under 35 U.S.C. § 102(e) for being directed to subject matter that is assertedly anticipated by the subject matter described in U.S. Patent 6,616,768 to Madsen (hereinafter “Madsen”).

In relying upon Madsen, the Office asserts that “[t]he limitations of a programmable material []consolidation[-]fabricat[ed] feature are met in view of the indefiniteness.” The Office is respectfully reminded that it may not mere claim limitations merely because it considers them to be indefinite. *See, e.g.*, M.P.E.P. § 2173.06. Instead, the Office is required to point out how

the allegedly indefinite limitation is being interpreted or, if the alleged indefiniteness creates a “great deal of confusion and uncertainty as to the proper interpretation of the limitations of a claim, it would not be proper to reject such a claim on the basis of prior art.”

M.P.E.P. § 2173.06.

That said, Madsen, which describes a process for removing dust from gypsum board, or drywall, following perforation of the gypsum board, lacks any express or inherent description of removing unconsolidated consolidatable material from at least one of a substrate and a programmable material consolidation-fabricated feature on the substrate. Further, Madsen lacks any express or inherent description of applying pressure to an unconsolidated consolidatable material. It has been asserted that dust is an unconsolidated material. Without arguing the efficacy of that assertion, it is respectfully submitted that dust is not a consolidatable material; particularly when considered in view of the scope of the claims, which are drawn to removal of unconsolidatable materials that are configured for use in a programmable material consolidation process.

Moreover, Madsen provides no express or inherent description that the substrate (gypsum board) to which pressure is applied has at least one feature that has been fabricated thereon by any type of consolidation, let alone programmable material consolidation. Instead, holes are the features of a gypsum board with which the disclosure of Madsen is concerned.

Therefore, Madsen does not anticipate several elements of independent claim 1, as amended and presented herein. As such, it would be inappropriate to maintain the 35 U.S.C. § 102(e) rejection of amended independent claim 1.

Claims 2-8 and 11-21 are each allowable, among other reasons, for depending directly or indirectly from independent claim 1, which is allowable.

#### Taniyama

Claims 1-22 stand rejected under 35 U.S.C. § 102(b) for reciting subject matter which is purportedly anticipated by that described in U.S. Patent 6,247,479 to Taniyama et al. (hereinafter “Taniyama”).

Taniyama describes a wash/dry apparatus for washing and drying semiconductor substrates “to remove a contamination such as particles, organic substances or metal ions from the surface of the substrate.” Col. 1, lines 11-14.

Notably, Taniyama does not expressly or inherently describe that the substrates that may be washed and dried with the apparatus disclosed in Taniyama may include at least one programmable material consolidation-fabricated feature thereon. Rather, the disclosure of Taniyama is limited to substrates with features that have been fabricated by conventional semiconductor processes (*e.g.*, blanket material deposition processes, material removal processes, etc.), none of which could be considered to comprise programmable material consolidation.

Moreover, none of the contaminants identified in Taniyama is an unconsolidated consolidatable material. Instead, they are residues of deposited materials, chemical reactants, etchants, and other materials that may not be further consolidated, and that are certainly not configured for use in any programmable material consolidation process. Thus, Taniyama does not expressly or inherently describe removing unconsolidated consolidatable material from at least one of a substrate and a programmable material consolidation-fabricated feature on the substrate.

It is, therefore, respectfully submitted that, under 35 U.S.C. § 102(b), the subject matter recited in amended independent claim 1 is allowable over the subject matter described in Taniyama.

Each of claims 2-22 is allowable, among other reasons, for depending directly or indirectly from independent claim 1, which is allowable.

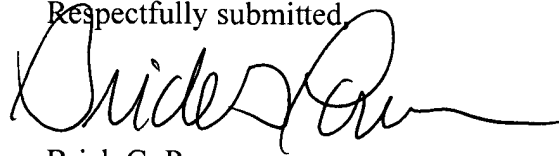
Claim 9 is further allowable since the disclosure of Taniyama is limited to recycling washing solution. Therefore, Taniyama does not expressly or inherently describe returning consolidatable material to a quantity of such material for use in subsequent programmable material consolidation fabrication.

Withdrawal of the 35 U.S.C. § 102 rejections of claims 1-22 is respectfully solicited, as is the allowance of each of these claims.

**CONCLUSION**

It is respectfully submitted that each of claims 1-22 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brick G. Power", written over the typed name.

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